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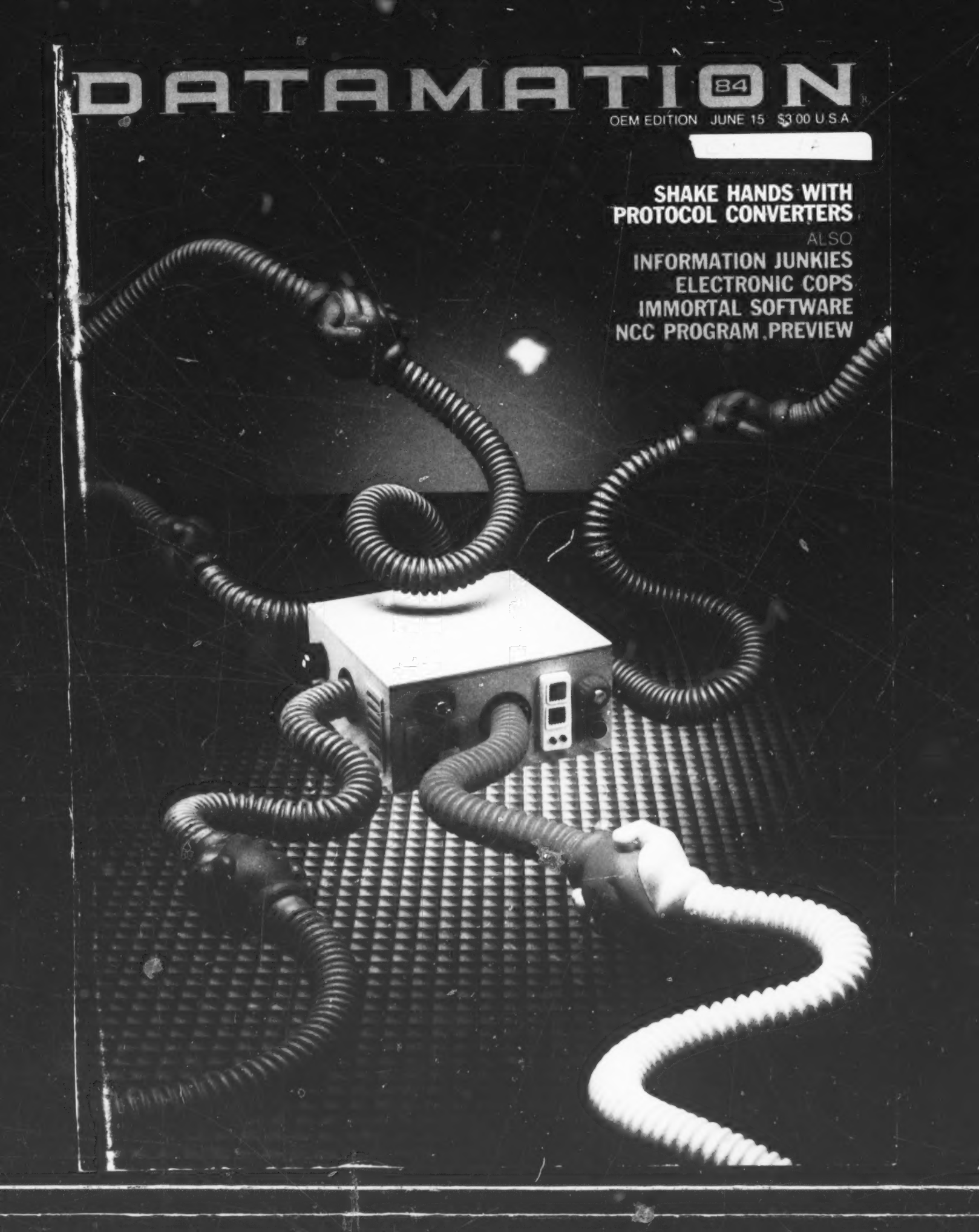

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COVER SCULPTURE BY KATHY JEFFERS/ PHOTOGRAPH BY WALTER WICK

The first signs of market maturity are on display in a new survey of vars and oems.

IS THE OEM MARKET MATURING?

Some of the early signs of market maturity are now being seen in the world of value added resellers, systems integrators, dealers, and original equipment manufacturers of turnkey computer systems. The rapid shift to microcomputer-based systems and intense price competition made things tough last year, if the just-released analysis of the market is any indication. Unit shipments were flat at 171,842 in 1983 compared with the prior year, according to the new survey of 2,007 companies by Sentry Data-base Publishing, Hudson, Mass. The 1984 edition of its *Directory of Systems Houses and Oems* says that the dollar value of 1983 sales to end users declined significantly, to $3.1 billion from the $3.6 billion recorded in 1982. The rapid shift to microcomputer-based systems and declining hardware prices explain the dollar drop in the face of flat shipment rates.

These low dollar figures and flat shipments are not an indication of a dying business; it's just that the industry is entering a new phase. Many end-user applications continued to enjoy strong popularity, judging by the sharply increased sales to certain markets. The number of systems shipped for general accounting applications grew 45% to 90,533, or about half of the total number shipped. But look at the relatively modest growth rates for word processing, 26%, and mailing lists, 19%.

Indeed, the respondents indicated that shipments of products for several applications actually declined: agricultural systems, CPA packages, stock and other securities accounting, and blood analysis packages are all examples of declining markets. Whether those declines are due to segment conditions, to a more broad-based market saturation, or both remains to be seen.

Another indication of the slowing of the boom for the value-added remarketers is in the diminishing number of new companies entering the business. Existing turnkey operators will be pleased to hear that 62 new companies called themselves oems last year, the smallest number of new entrants since 1973. The 9% growth rate for new starts in the market, sustained over the past five years, appears over.

It's clear by the numbers that the common applications have become just that—common. Vars looking for a market niche have to search harder for some end-user need that is not being fulfilled, or else they run the risk of meeting too many other players. Certain applications look like ideal areas for new vendors. Graphics-based systems appear to be immensely popular: about a third of all systems now include at least one graphics software package. Expert systems, one of the key parts of the new artificial intelligence effort, are hot topics in medical circles (see "Just What the Doctor Ordered," January, p. 201-13); medical diagnosis system sales climbed more than 400% to 33,296. All the recent hype about computers in education has proved to be more than just hype—schools are buying them, as are big companies for purposes of training. More than 74,000 systems were sold to schools and companies last year by 334 oems, or three times the level of 1982 shipments. (see "Learning the Education Market," p. 210-25)

The Sentry survey was done earlier this year. Questionnaires were received from 70% of the domestic vars, oems, systems houses, dealers, and software houses. In addition to identifying their primary lines of business, the oems were asked to list the brand names of hardware and peripherals they were buying.

As vendors and security analysts may already have noticed, the oem market became a quagmire of shifting allegiances last year.

FIG. 1

FASTEST GROWING END-USER MARKETS IN 1983

MARKET	% CHANGE
Motor vehicle dispatching/routing	+1,455
Library automation	+ 798
Credit verification	+ 532
Law enforcement	+ 481
Public utility billing	+ 450
Nursing home admin.	+ 395
Seismic data processing	+ 381
Teaching/instruction	+ 378
Motor vehicle fleet acctg.	+ 349
Medical diagnosis	+ 344

SHRINKING END-USER MARKETS IN 1983

MARKET	% CHANGE
Stock/securities acctg.	−86.7
Blood analysis, blood bank accounting	−73.3
CPA client write-ups, billing	− 6.8
Agricultural accounting	− 6.2

FIG. 2

TEN MOST POPULAR APPLICATIONS FOR VARS

APPLICATION	1983 UNIT SHIPMENTS	% CHANGE
Word processing	93,662	26
General accounting (receivable, payable, ledger, payroll)	90,533	45
Order Entry	88,391	53
Mail list/labels	87,339	19
Sales analysis/forecasting	85,776	59
Database management	85,662	68
Billing/invoicing	84,408	44
Inventory control	71,116	71
Electronic mail	70,074	150
Graphics	65,840	143

Two years ago ago, agsystem sales soared; last year they declined.

The switch to microcomputer-based systems accelerated. Last year oems shipped 67,732 micro-based systems and 20,424 minicomputer-based systems, up 84% and 50%, respectively, from the year before. The big changes in the marketplace were indicated not so much by the increases in shipments but by the nameplates on the systems. Lots of surprises here.

APPLE OUT OF OEM BUSINESS

Apple Computer Inc., Cupertino, Calif., practically disappeared from the oem business in 1983 due to dealer conflicts and the IBM PC assault. In 1980, Apple had 48.7% of the micro market, but last year it posted a 4.9% share, an also-ran after years of dominance. The grand old names in the computer business wiped the Silicon Valley wonderboys off the oem map.

Digital Equipment Corp., Maynard, Mass., regained some of the luster it lost in the business, though few seemed to realize that the Rainbow, DECMate, and Professional lines of microcomputers had the number one rank when it came to micros bought by vars. Its 11.4% share among microcomputer suppliers to the oem market indicated that although DEC's pc sales were a disappointment to the company and to analysts, the legion of DEC oems and dealers remained loyal to the company that the Olson brothers built. It also shows the level of dependence on DEC software and hardware architecture. As many people have said, don't count DEC out of the computer business—there are hundreds of thousands of satisfied users running PDP-11s and VAXs.

The fact that IBM ranked only third in the microcomputer category with a 9.1% share may be a surprise to those who thought it would emerge as number one in the oem markets. Its astounding success in the personal computer business is really a success in only two areas, not throughout the marketplace. Sales to major corporate dp centers and through retail channels like Computerland were the big factors for IBM last year, since it couldn't spare as many machines for its var customers. Obviously a lot of vars wanted to sell the PC but couldn't get their hands on adequate numbers of machines. Hence the success of IBM PC clones from Texas Instruments, Eagle, and Columbia Data Products. The 9.1% market share will almost assuredly rise this year as Big Blue ships more units.

To find Commodore as the number two ranking micro cpu-maker beating out even mighty IBM will give Jack Tramiel, former Commodore president, some small consolation. Given its low-tech image and consumer marketing, how did the West Chester, Pa.-based consumer products company post such a strong showing in industrial markets? Obviously a number of oems thought the model 64 and the other Commodore products were a bargain capable of doing the job. Wonder how many of the Commodore oems told their customers what was inside the turnkey system?

As for TeleVideo's strong showing, with 8.5% of the micro market, congratulations must be given to Phil Hwang for the remarkable strategic shifts his company has made over the past two years. To have grown from an upstart terminal vendor who slew the traditional leaders to a top-ranked contender in the microcomputer market within a few years is more than many far larger and older

FIG. 3

PERCENT SHARE OF MINICOMPUTERS SOLD VIA SYSTEMS HOUSES/OEMS

MANUFACTURER	1979	1980	1981	1982	1983
Cado Systems	—	—	—	—	1.5
Century Computer	—	—	—	—	3.4
Data General	20.2	21.6	21.5	11.5	6.1
Datapoint	1.4	2.0	4.2	4.1	3.0
Digital Equipment	46.2	43.5	48.4	42.8	28.4
Hewlett-Packard	3.7	5.2	6.0	7.2	3.9
Honeywell	1.9	1.8	2.5	1.4	1.0
IBM	2.4	5.4	3.2	4.7	14.5
NEC Information Systems	—	—	—	—	1.7
Point 4 Data	—	—	—	—	2.0
Prime	1.3	1.5	1.5	11.0	1.4
Texas Instruments	2.0	2.1	1.8	5.5	2.3
Wang Laboratories	—	—	—	—	3.9
All others	20.9	16.9	10.9	11.8	26.9
Total Sample (units shipped)	**11,089**	**14,066**	**14,463**	**13,440**	**20,424**

FIG. 4

PERCENT OF PERSONAL COMPUTERS SOLD VIA SYSTEMS HOUSES/OEMS

MANUFACTURER	1979	1980	1981	1982	1983
Alpha Micro	—	—	1.5	1.0	1.8
Altos Computer	—	—	—	4.9	4.6
Apple	19.0	48.7	37.9	20.3	4.9
Columbia Data Products	—	—	—	—	1.4
Commodore	13.0	5.9	6.5	5.4	10.3
Corona Data Systems	—	—	—	—	3.5
Cromemco	4.6	1.7	2.1	2.4	4.9
Digital Equipment	—	—	—	1.0	11.4
Eagle	—	—	—	—	1.9
Hewlett-Packard	—	—	—	—	1.0
IBM	2.2	1.5	3.7	11.3	9.1
Kaypro	—	—	—	—	2.2
Northstar	5.0	2.1	4.3	6.1	4.9
Radio Shack	—	—	1.9	1.2	1.0
Reliance Computer	—	—	—	—	2.2
TeleVideo	—	—	—	3.5	8.5
Texas Instruments	—	—	—	3.3	4.3
Xerox	—	—	1.2	3.4	2.0
All others	56.2	40.1	40.9	36.2	21.1
Total Sample (units shipped)	**9,344**	**18,188**	**21,750**	**36,792**	**67,732**

DEC and Commodore, not IBM or Apple, were the top-selling micros last year.

companies have accomplished. And many have tried.

Success in selling microcomputers to oems in some cases meant fewer dollars and units shipped from the minicomputer vendors. DEC lost market share in the minicomputer business, dropping to 28.4% of the 1983 total from 42.8% of the 1982 total. In terms of units shipped, the DEC mini department for oems showed a flat shipment curve at around 5,800 boxes. Data General suffered a similar fate, though the strong end-user demand for its 32-bit family of boxes may have diverted shipments to its direct sales force. The big winner in the minicomputer business was IBM.

Nowadays a var can buy everything from a 4300 to a PCjr from Big Blue, and with a nice discount if the order is big enough (see "Doing Business With IBM," April 15, p. 136-3). More than 1,000 vars and value added dealers and other new IBM acronyms gave Big Blue a hefty new marketing force, and the market share numbers in minis told the tale. In 1983 IBM's oem market share leaped to 14.5%, or half the minicomputer market share of the traditional value added market leader, DEC.

NEWCOMERS INVADE VAR RANKS

The wave of newcomers to the var world also became evident in the rankings of the minicomputer vendors. Wang and Prime are two mini makers anxious to expand their var business, though only one showed some success last year. Wang's 3.9% market share in the mini business last year was a strong showing for a first-time effort. As for Prime's fall from grace, from 11% to 1.4%, the many shifts in emphasis at Prime indicate that the var effort of the past may not continue in the future.

Another sign of maturity, or at least a new phase for the industry, is the growing importance of the "other" category. The smaller vendors of minicomputer hardware collectively sold 27% of the systems last year, up from 11.8% in 1982. As the big vendors and their micro marketers extend their efforts toward the high-volume, low-price end of the market, a void appears open for customized applications-oriented packages on minis. As for the fate of the microcomputer-based "other" vendors, there are indications that their future is strictly on the fringes of the industry—their share of the micro-based turnkey business is down to 21% from a high of 56% in 1979.

The effect of microcomputers also was seen in the type of peripherals moved by oems last year. The survey found 438,559 peripheral devices sold last year, with dot matrix printers and floppy disk drives the leading categories. The 32% increase in peri-

FIG. 5

PERIPHERALS SALES VIA OEMS

TYPE OF PERIPHERAL	QUANTITY SOLD VIA OEMs 1980	1981	1982	1983	% CHANGE
Printers					
Dot matrix	15,920	51,156	68,994	82,999	+ 20
Letter quality (daisywheel, thimble)	—	—	20,524	25,761	+ 26
Line printers (under 300 lpm)	3,116	8,710	6,494	7,860	+ 21
Line printers (300 lpm & up)	3,266	6,833	6,581	8,270	+ 26
Teleprinter terminals (with keyboard)	5,263	27,633	19,403	14,830	− 24
Group Total	**27,565**	**94,362**	**121,996**	**139,720**	**+ 15**
Disk drives					
Diskette (floppy) drives	24,187	41,236	44,553	60,040	+ 35
5¼-inch Winchester drives	—	—	14,250	10,958	− 23
8-inch Winchester drives	1,170	4,558	8,423	6,843	− 19
14-inch Winchester drives	—	—	3,690	4,671	+ 27
Fixed disk drives	336	682	3,675	4,466	+ 21
Removable disk drives	8,376	11,197	8,958	7,610	− 15
Group total	**34,069**	**57,673**	**83,549**	**94,588**	**+ 13**
Tape drives					
Cassette/cartridge drives	2,082	4,444	6,708	8,106	+ 21
Reel-to-reel drives	3,264	4,323	4,296	6,463	+ 50
Group total	**5,346**	**8,767**	**11,004**	**14,569**	**+ 32**
Crt terminals/monitors					
Alphanumeric	37,425	89,006	96,007	52,147	− 46
Graphic	1,591	5,578	8,006	12,816	+ 60
Group total	**39,016**	**94,586**	**104,013**	**64,963**	**− 38**
Other					
Memory expansion boards	2,833	13,034	14,643	7,558	− 48
Digital plotters	152	773	1,205	3,093	+157
Group total	**2,985**	**13,807**	**15,848**	**10,651**	**− 33**

FIG. 6

DOT MATRIX PRINTER MARKET SHARE

MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
Centronics	2.4	1.2
Dataproducts	1.2	1.5
Datasouth	2.4	3.8
Digital Equipment	17.5	6.0
Epson America	25.3	10.3
IBM	1.6	2.8
Mannesman Tally	1.1	1.3
NCR	1.0	—
Okidata	9.0	29.2
Printronix	—	1.2
Siemens	—	1.9
Star Micronics	—	6.1
Texas Instruments	17.6	7.5
All others	20.7	17.6
Total Units	**68,994**	**82,999**

YOU KNOW ROBERTS, IT WASN'T MY IDEA TO HIRE YOU. I'M NOT IN BUSINESS TO DO FAVORS. I'VE GOT BUILDINGS TO PUT UP.
OH I TUCK YOU'RE SURE BUT I NEVER BELIEVED YOU COULD MAKE IT. BACKBREAKING WORK ROTTEN WEATHER...
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Ad

Okidata squeezed Epson out of predominance in the dot matrix printer business.

FIG. 7

FLOPPY DISK DRIVE MARKET

MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
Apple Computer	6.6	2.2
Commodore	2.4	1.1
Digital Equipment	—	1.2
IBM	7.2	1.6
Mitsubishi	1.7	1.1
North Star Computers	—	1.9
Shugart	12.6	22.0
Syncom	—	16.7
Tandon Magnetics	24.3	6.0
All others	45.2	46.2
Total Units	44,553	60,040

FIG. 8

5¼-INCH WINCHESTER DRIVE MARKET

MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
CMI	—	1.4
Control Data	—	5.7
Corvus Systems	4.3	3.3
Datamac	—	1.2
Hewlett-Packard	—	1.2
IBM	—	1.0
International Memories	5.2	12.3
Seagate Technology	1.9	1.6
Shugart	1.7	3.9
Tallgrass Technologies	—	1.1
Tandon Magnetics	23.2	6.0
All others	63.7	61.3
Total Units	14,250	10,958

pherals shipped in 1983 compared with the year-earlier period shows that customers are ordering more complete systems in the first round, since the overall shipment total of 171,000 did not increase dramatically.

Swift and significant changes in the peripheral vendor of choice appeared last year. Epson's strength in the dot matrix printer business showed some weaknesses last year. Despite the imprimatur of IBM for its PC systems, Epson's market share plummeted 15 percentage points to 10.3%. At the same time, a Japanese rival appeared to gain from its countrymen as well as from others. Okidata won 20 market share points last year, and by year-end was the largest-selling brand of dot matrix printers to oems.

Several other big names in the computer business lost significant market share in the printer arena. DEC and TI collectively lost 21 market share points. Significant shifts in marketing tactics are part of the explanation, but it also appears that the lower-cost Japanese products are starting to make significant inroads in the sales of peripherals by the big cpu vendors.

When it comes to disk drives of all shapes and sizes, the oem world turned to Shugart for more and more of its needs. The Xerox subsidiary had the number one rank in floppy drives, at 22% of a rising market—the 60,040 units shipped in 1983 by all vendors was a 33% increase over the year-earlier period. As for hard disks, Shugart had a growing share of the 5¼-inch market, a strong presence in the 8-inch segment, and was holding its own in other disk drive categories. In the red-hot 5¼-inch hard-disk sector, International Memories reigned supreme, with a 12.3% share of the business.

The decline in 5¼-inch hard-disk systems to 10,958 from 14,250 is not a misprint. It simply reflects the fact that a number of hard disks are being added to the micro-based

system by the machine vendors, not the systems integrators. Floppies remained an add-on product for the var, while Winnies became a feature more often installed by the machine maker at the factory. Given the tremendous price difference between the $2,000 or $3,000 retail price for hard-disk systems bought over the counter vs. the reported $500 or less cost to IBM of a hard-disk subsystem from Seagate or Tandon, it's not surprising that savvy buyers would rather include the Winnie as part of the original equipment purchase. Think of the hard disk as an auto air conditioner—it's a lot easier and cheaper to buy an auto air conditioning unit when you buy the car, rather than later.

As more and more hard-disk systems are sold and end users realize the value of their stored data, a source of backup memory becomes critical. The backup tape business is starting to take off, with all the signs of a future key product sector. New companies, venture capital money, and big promotions are in the wind. Already, reel-to-reel tape drive systems sales are soaring, up 50% last year to 6,463 systems. DEC and Cipher Data Products are the biggest factors here, with streaming tape drives rapidly taking over market preference from the start/stop technology.

The dust is starting to settle over the battleground on which the fight for crt market dominance took place. Big guns like DEC, NCR's ADDS, Lear Siegler and a host of other companies have all raised the white flag, and TeleVideo is now top dog. Its 16.5% market share in the oem world puts it ahead of the more established players. The operating philosophy of building low-cost terminals out of modular component assembly is right out of the Henry Ford handbook for mass producing cars: interchangeable parts. The Korean immigrant Phil Hwang added the American virtues of long production runs and built a big business, but now another company with even longer production runs is making a big play for the crt terminal market. Zenith Data Systems, subsidiary of the television set producer, has 5% of the business plus some sizable contracts with IBM and others to put its private label on power supplies as well as crts. And Zenith makes more tvs—several million a year—than anybody makes computers, except maybe for Commodore. It will be an interesting when TeleVideo and Zenith face each other tube to tube.

The rise of high-volume operations like Zenith and TeleVideo also shows how the turnkey computer systems industry is consolidating behind fewer key players in the big hardware categories. Only a few will survive, and only if they are smarter and more flexible than those who once dominated.

With the slowed growth rate of new vars and systems integrators, 1983 could be considered a watershed year, when the old excuse of poor economic times could not explain the slowdown in growth rates of new corporate entries. The declining dollar value of total oem sales also shows that the vars, oems, systems integrators, and software houses had better sharpen their pencils and sell their solutions to customers more aggressively, because the first signs of market saturation—the reduced shipment rates for general office systems—may be on the horizon.

The 1984 Directory of Systems Houses and Computer Distributors lists 2,007 oems in alphabetical order, by location, and by primary cpu vendor. It is available from Sentry Database Publishing, 5 Kane Industrial Drive, Hudson, MA 01749.

FIG. 9

TAPE DRIVE MARKET

CASSETTE/CARTRIDGE MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
Archive	6.5	17.4
Commodore	20.1	13.4
Control Data	—	1.2
DEI	—	2.4
Digital Equipment	4.2	12.1
Hewlett-Packard	2.6	4.0
Innovative Data	—	1.2
Kennedy	—	2.6
All others	66.6	45.7
Total Units	6,708	8,106

REEL-TO-REEL MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
Cipher Data Products	7.7	7.3
Control Data	4.8	1.2
Data General	4.8	4.5
Digital Equipment	8.4	8.5
Hewlett-Packard	11.2	6.0
IBM	—	2.0
Innovative Data	—	4.0
Kennedy	12.6	8.5
Pertec	3.5	2.8
Telex	—	5.4
All others	47.0	49.8
Total Units	4,296	6,463

FIG. 10

ALPHANUMERIC CRT TERMINAL MARKET

MANUFACTURER	1982 Oem % MARKET SHARE	1983 Oem % MARKET SHARE
Adds	—	4.9
Data General	2.0	1.6
Digital Equipment	16.5	13.7
Electrohome Ltd.	—	3.3
Hazeltine	1.3	3.5
IBM	1.3	1.2
Lear Siegler	1.7	5.1
MicroTerm	—	3.4
Raytheon Data Systems	2.2	1.4
Soroc Technology	2.7	1.5
TeleVideo	13.0	16.5
Texas Instruments	7.5	2.7
Visual Technology	1.8	2.1
Zenith Data Systems	2.2	5.1
Zentec	1.4	1.7
All others	46.4	32.3
Total Units	96,007	152,147